

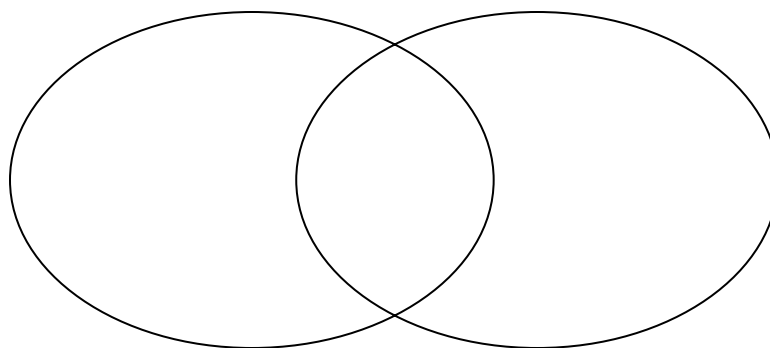
## Third Grade “Ecology” Assessment

- 1a. The science that studies the relationship between living things and their environment is called \_\_\_\_\_.
- a. biology
  - b. ecology
- 1b. The science that studies the relationship between living things and their environment is called \_\_\_\_\_.
- a. biology
  - b. botany
  - c. zoology
  - d. ecology
- 1c. Explain the difference between ecology and biology or create a Venn Diagram showing the similarities and differences between ecology and biology.

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- 2a. A special term for the place where an animal or a plant usually lives is \_\_\_\_\_.
- a. habitat
  - b. location
- 2b. A special term for the place where an animal or a plant usually lives is \_\_\_\_\_.
- 2c. Describe the differences in the habitats of a polar bear and a monkey. Give as many details as possible.

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3a. All parts of nature rely on one another. In the balance of nature there is an \_\_\_\_\_ among the living organisms and their environment. For example, if all of the plants died it would affect the environment, which would in turn affect the animals who ate the plants and they would die too.

- a. interdependence
- b. independence

3b. All parts of nature rely on one another. In the balance of nature there is an \_\_\_\_\_ among the living organisms and their environment. For example, if all of the plants died it would affect the environment, which would in turn affect the animals who ate the plants and they would die too.

3c. Explain how animals and plants are interdependent on one another and the environment.

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4a. The balance of nature is a \_\_\_\_\_ condition.

- a. constantly changing
- b. static

4b. The balance of nature is a \_\_\_\_\_ condition.

4c. Explain how the balance of nature is constantly changing.

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5a. Give the name for the following process that is described in the following steps: the sap of a plant is eaten by a beetle; a bird eats the beetle; a cat eats the bird.

- a. food web
- b. food chain

5b. Give the name for the following process that is described in the following steps: the sap of a plant is eaten by a beetle; a bird eats the beetle; a cat eats the bird.

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5c. Describe the steps in a food chain, using your own example.

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6a. In a food chain the \_\_\_\_\_ (plants) make the food and the \_\_\_\_\_ (animals) eat it.

- a. producers; consumers
- b. consumers; producers

6b. In a food chain the \_\_\_\_\_ (plants) make the food and the \_\_\_\_\_ (animals) eat it.

- a. decomposers; producers
- b. producers; consumers
- c. consumers; producers
- d. consumers; decomposers

6c. Draw the steps in a food chain of your own choice. Label the producer and any consumers. Then write a short description of the steps in your food chain.

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7a. Bacteria, fungi, and scavengers are called \_\_\_\_\_ because they break up dead plant or animal matter into material that producers will use.

- a. consumers
- b. producers
- c. decomposers

7b. Bacteria, fungi, and scavengers are called \_\_\_\_\_ because they break up dead plant or animal matter into material that producers will use.

7c. Describe the work of a decomposer and how it fits into a circular food chain that cycles again and again. Give an example.

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8a. Usually plants and animals live close together. Most animals will eat more than one kind of thing. The resulting food chains are connected and are called \_\_\_\_\_.

- a. food webs
- b. food communities

8b. If a bird eats the seeds from a plant and then a cat eats the bird, we call it a food chain. Or that same bird might have eaten an insect that had fed on a leaf. Then the bird might have been eaten by a fox, creating a second food chain. These two food chains are connected by their common link of the bird. These connected, or intersected, food chains make a \_\_\_\_\_.

8c. Draw and label a picture of a food web. Explain what makes it a food web.

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9a. A specific community of living things and their environment is called a(n)

\_\_\_\_\_.

- a. biosystem
- b. ecosystem

9b. List three examples of an ecosystem:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

9c. Would you describe an ecosystem as a simple chain or as a more complex web? Give reasons or an example to support your answer.

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10a. Ecosystems can be affected by changes in the environment. Mark the following items if they might cause change in a particular ecosystem:

- \_\_\_\_\_ plants which grew are now all dead
- \_\_\_\_\_ torrential rains fall
- \_\_\_\_\_ food supplies become scarce
- \_\_\_\_\_ food supplies become plentiful

10b. List three examples of environmental changes that could occur and affect an ecosystem:

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10c. Imagine you hear about a forest fire starting, sparked by lightning. Tell what changes might take place in a forest ecosystem if a forest fire did break out. Describe at least three changes.

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11a. Air pollution and water pollution are examples of \_\_\_\_\_ threats that can cause change in an ecosystem.

a. man-made  
b. natural

11b. List two examples of man-made threats that can cause change in an ecosystem.

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11c. Explain what happens to an ecosystem when a man-made threat occurs in the environment. Give an example.

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12a. The word \_\_\_\_\_ means to make something dirty or impure or unsafe.

a. disintegrate  
b. pollute

12b. The word \_\_\_\_\_ means to make something dirty or impure or unsafe.

12c. What does it mean to “pollute” the environment? You may give an example.

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13a. There are many causes of air pollution. Emissions, the exhaust from cars, trucks, and buses, or thick smoke from chimneys or smokestacks can turn the air dark and cloudy and make the air harmful to breathe. This dirty air is called \_\_\_\_\_.

- a. smog  
b. fog

13b. List at least two causes of air pollution for the smog we see over some cities.

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13c. List two major causes of air pollution and explain how these affect the environment.

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14a. One source of water pollution is \_\_\_\_\_ which dump chemicals and waste into our rivers or lakes; another source is \_\_\_\_\_ which can cause dug-up soil, full of fertilizers and chemicals, to wash into our water supply.

- a. farming; factories
- b. factories; farming

14b. Name two major causes of water pollution.

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14c. Explain what can cause water pollution and what effect(s) that can have on the environment.

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15a. There are several ways we can protect the environment. One way is using something carefully or not wasting it, which we call \_\_\_\_\_. Another way is using something again instead of throwing it away, which we call \_\_\_\_\_.

- a. recycling; conserving
- b. conserving; recycling

15b. Explain the purpose of conservation and recycling.

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15c. Name two ways to protect the environment and give an example of each.

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16a. The man who devoted much of his life to exploring the wilderness areas in America was \_\_\_\_\_. He also documented about its beauty in his writings.

- a. Teddy Roosevelt
- b. John Muir

16b. The man who devoted much of his life to exploring the wilderness areas in America was \_\_\_\_\_. He also documented about its beauty in his writings.

16c. Who was John Muir? List at least three of his accomplishments.

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The following Colorado Model Content Standards are covered in this assessment by the questions indicated:

Questions 9a, 9b, 9c: Standard K-4.2.3.a observing and describing parts of system (*for example, water in a closed jar, water in an open jar, a plant terrarium*)

Questions 1a, 1b, 1c, 3a, 3b, 3c, 7a, 7b, 7c, 9a, 9b, 9c, 10a, 10b, 10c, 11a, 11b, 11c: Standard K-4.3.1.a distinguishing living from nonliving things

Questions 2a, 2b, 2c, 3a, 3b, 3c, 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b, 6c, 7a, 7b, 7c, 8a, 8b, 8c, 9a, 9b, 9c, 10a, 10b, 10c, 11a, 11b, 11c, 14a, 14b, 14c, 15a, 15b, 15c: Standard K-4.3.1.d giving examples of how organisms interact with each other and with nonliving parts of their habitat

Questions 1a, 1b, 1c, 5a, 5b, 5c, 6a, 6b, 6c, 7a, 7b, 7c, 8a, 8b, 8c, 9a, 9b, 9c, 12a, 12b, 12c, 13a, 13b, 13c: Standard K-4.3.2.a recognizing that green plants need energy from sunlight and various raw materials to live, and animals consume plants and other organisms to live

Questions 5a, 5b, 5c, 6a, 6b, 6c, 7c, 8a, 8b, 8c, 9a, 9b, 9c: Standard K-4.3.2.b recognizing the interrelationships of organisms by tracing the flow of matter and energy in a food chain

Questions 2a, 2b, 2c: Standard K-4.3.4.c identifying characteristics of plants and animals that allow them to live in specific environments

Questions 14a, 14b, 14c: Standard K-4.4.3.c recognizing the importance and uses of water (*for example, drinking, washing, irrigating*)

Questions 15a, 15b, 15c: Standard K-4.5.c describing resource-related activities in which they could participate that can benefit their communities (*for example, recycling, water conservation*)

## Answer Key

- 1a. b. ecology  
1b. d. ecology  
1c. Acceptable answers could include:  
-ecology is the study of the relationship between living things and their environment  
-biology is the study of living things
- 2a. a. habitat  
2b. habitat  
2c. Acceptable answers could include:  
-polar bear-Arctic cold, snow and ice, glaciers, sub-zero water, etc.  
-monkey-tropical jungle, trees, high temperatures and humidity, green lush growth, etc.
- 3a. a. interdependence  
3b. interdependence  
3c. Acceptable answers could include:  
-any change in nature affects something else  
-nothing in nature is independent of everything else  
-many various examples can be given, such as if all the plants died, eventually all the animals would die too  
-accept any appropriate examples
- 4a. a. constantly changing  
4b. constantly changing  
4c. Acceptable answers could include:  
-the balance of nature is always changing  
-it makes adjustments continually  
-if one group starts taking over, then nature makes the adjustments so they can't take over entirely  
-plants can't take over the world because animals eat them  
-animals don't take over because there would not be enough plants to feed them
- 5a. b. food chain  
5b. food chain  
5c. Acceptable answers could include any simple food chain with a producer and at least one consumer
- 6a. a. producers; consumers  
6b. b. producers; consumers  
6c. Acceptable answers could include any drawing of a simple food chain properly labeled with "producer" and "consumer." The written portion should begin with mention of the producer.
- 7a. c. decomposers  
7b. decomposers

- 7c. Acceptable answers could include:  
 -decomposer-bacteria, fungi, and scavengers who break up dead matter into usable material for producers.  
 -a producer may be nourished by decomposed material so it can in turn make food and fulfill its link in the food chain, and so on
- 8a. a. food webs  
 8b. food web  
 8c. The drawing of the food web must include at least two interconnected food chains. The written portion should include that it is a network of food chains that make up a food web, or something similar.
- 9a. b. ecosystem  
 9b. Acceptable answers could include:  
 -any three specific communities of living things and their environments, such as a desert, jungle, forest, pond, river, lake, etc  
 9c. Acceptable answers could include:  
 -a more complex web  
 -every living thing is interdependent with its environment
- 10a. ALL answers will be marked  
 10b. Acceptable answers could include:  
 -plants which grew are now all dead  
 -torrential rains fall  
 -food supplies become scarce  
 -food supplies become plentiful  
 10c. Acceptable answers could include:  
 -plant life dies  
 -forest changes from shaded, protected area to wide open, spacious and sunny environment  
 -animals driven to other locations or die  
 -decomposers move in and make a lot of matter for future producers
- 11a. a. man-made  
 11b. Acceptable answers could include:  
 -air pollution  
 -water pollution  
 -smoke from factories  
 -emissions from cars, trucks, and buses  
 -farming runoff containing harmful chemicals  
 -factory waste  
 11c. Acceptable answers could include:  
 -plants and animals can be harmed by breathing polluted air  
 -plants and animals can be harmed by drinking polluted water  
 -polluted water can affect populations of fish  
 -etc.

- 12a. b. pollute
- 12b. pollute
- 12c. Acceptable answers could include:  
 -pollute-make something dirty or impure or unsafe  
 -any appropriate example of air or water pollution
- 13a. a. smog
- 13b. Acceptable answers could include:  
 -emissions-exhaust from cars, trucks, and buses  
 -smoke from chimneys of smokestacks
- 13c. Acceptable answers could include:  
 -refer to answer for 13b  
 -causes smog  
 -makes air harmful to breathe
- 14a. b. factories; farming
- 14b. Acceptable answers could include:  
 -factories-dump chemicals and waste into rivers and lakes  
 -farming-dug-up soil, full of fertilizers and chemicals washes into water supply
- 14c. Acceptable answers could include:  
 -refer to answer for 14b  
 -harmful to drink leading to sickness or even death  
 -can affect populations of fish, reducing them
- 15a. b. conserving; recycling
- 15b. Acceptable answers could include:  
 -to protect the environment  
 -allow future generations to enjoy life
- 15c. Acceptable answers could include:  
 -conservation-turning off lights or turning down heat  
 -recycling-saving pop cans to be reused
- 16a. b. John Muir
- 16b. John Muir
- 16c. Acceptable answers could include:  
 -devoted much of his life to exploring the wilderness  
 -documented his findings and observations in writing  
 -advocate for the preservation of the wilderness  
 -father of our national park system  
 -founder of Sierra Club-an important conservation group